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| Notice of Allowability | Application No. | Applicant(s) | |
| | 10/676,210 | YAMAUCHI ET AL. | |
| | Examiner | Art Unit | |
| | Christopher M. Kalivoda | 2883 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to Amendment received March 25, 2005.
2. ☒ The allowed claim(s) is/are 3 and 7-14.
3. ☒ The drawings filed on 01 October 2003 are accepted by the Examiner.
4. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☒ All b) ☐ Some* c) ☐ None of the:
 1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

- | | |
|---|--|
| 1. <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 5. <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 6. <input checked="" type="checkbox"/> Interview Summary (PTO-413), Paper No./Mail Date <u>060805</u> . |
| 3. <input type="checkbox"/> Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date _____ | 7. <input checked="" type="checkbox"/> Examiner's Amendment/Comment |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit of Biological Material | 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance |
| | 9. <input type="checkbox"/> Other _____ |

Reasons for Allowance

Examiner's Amendment

An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

In accordance with discussions made in a telephone interview with the inventor's representative, Mr. Thomas Spinelli on June 9, 2005, the following changes have been made:

- a. In claim 12, last line, insert -- of the second slab waveguide -- after the word portions.
- b. In claim 13, last line, insert -- of the second slab waveguide -- after the word portions.

Claims 3 and 7-14 are allowed for the following reasons:

The instant application is deemed to be directed to a non-obvious improvement over the invention patented in Pat. No. 6,879,748 to Kaneko.

Independent claim 12 is allowed because the prior art of record, taken alone or in combination, fails to disclose or render obvious an optical multi-demultiplexer comprising a different refractive index region having a tapered shape decreasing in width from both side portions of the second slab waveguide toward a central portion of

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the second slab waveguide in combination with the rest of the limitations of the base claim.

Independent claim 13 is allowed because the prior art of record, taken alone or in combination, fails to disclose or render obvious an optical multi-demultiplexer comprising a different refractive index region having a reverse-tapered shape increasing in width from both side portions of the second slab waveguide toward a central portion of the second slab waveguide in combination with the rest of the limitations of the base claim.

Independent claim 14 is allowed because the prior art of record, taken alone or in combination, fails to disclose or render obvious an optical multi-demultiplexer comprising a different refractive index region wherein the region comprises a pair of peninsular different refractive index regions projecting from both sides of the second slab waveguide toward a central portion of the second slab waveguide in combination with the rest of the limitations of the base claim.

Claims 3 and 7-11 depend on claims 12 and therefore they are also allowed.

Kaneko describes a optical multi-demultiplexer comprising input waveguides, a first slab waveguide, channel waveguide array, a second slab waveguide and output waveguides on a substrate. The second slab waveguide has a tapered region of different refractive index but the reference is silent with respect to the region extending from both sides of the second slab waveguide.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christopher M. Kalivoda whose telephone number is (571) 272-2476. The examiner can normally be reached on Monday - Friday (8:30 - 5:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Frank G. Font can be reached on (571) 272-2415. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Cmk
06/09/05



Frank G. Font
Supervisory Patent Examiner
Technology Center 2800